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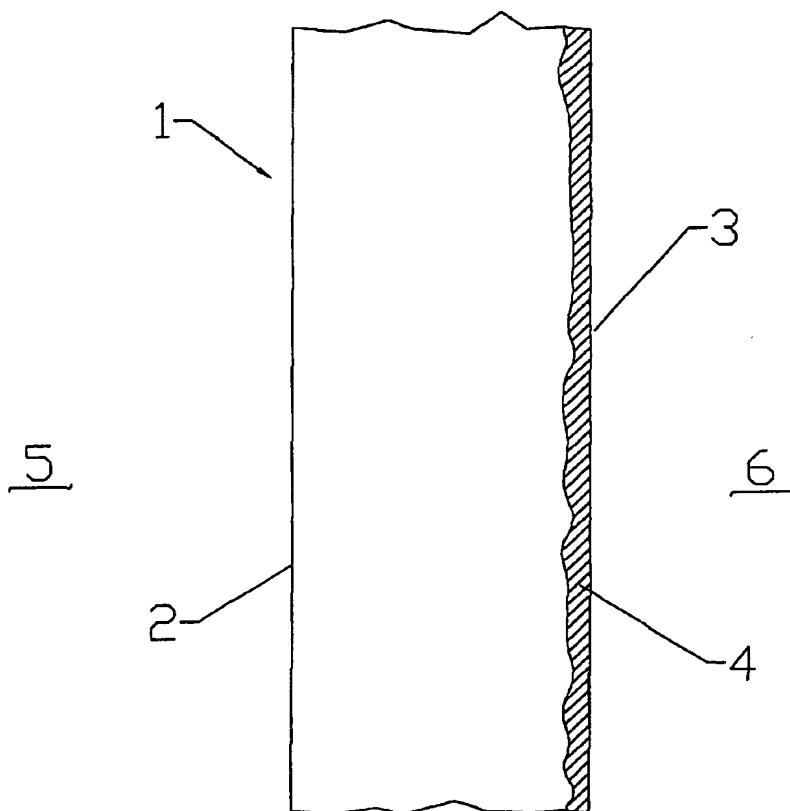
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- (71) Applicant and  
(72) Inventor: MEACHAM, George, Bevan, Kirby [US/US];  
18560 Parkland Drive, Shaker Heights, OH 44122 (US).
- (74) Agents: CORLESS, Peter, F. et al.; Edwards & Angell,  
LLP, P.O. Box 9169, Boston, MA 02209 (US).
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— with international search report

[Continued on next page]

(54) Title: DIFFUSION STABILIZED GAS BARRIERS



(57) Abstract: A metallic barrier (1) and a method for separating fuel (5) and oxidant (6) gases are disclosed for use in high temperature systems such as solid oxide fuel cells (SOFC) or cell stacks. The metallic barrier (1) can be formed as a metallic bipolar separator plate or seal, without requiring the use of chromium alloys or noble metals. Controlled diffusion of fuel gas (5) through the metallic barrier (1) limits the thickness of an adherent electronically insulating oxide layer (4) on an opposing surface in contact with oxidant gas (6). This stabilized oxide layer may be penetrated by refractory conductive paths through the oxide layer and the metallic barrier.



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12 August 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/36199

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01M 2/14, 2/16, 2/08

US CL : 429/34, 35, 38, 39

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 429/34, 35, 38, 39

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| X          | US 5,942,349 A (BADWAL et al) 24 August 1999 (24.08.1999), see col.2, lines 8-13, 43-67; col. 3, lines 1-15, lines 23-33, 40-51; col. 4, lines 1-15, 23, 24, 28, 29, 32-46, 47-49, 57-60; col. 5, lines 1-21. | 1-4, 8-10, 12, 13     |

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Bruce F. Bell

Telephone No. 571 272-1700